

Lunar Flywheel weekly meeting- Minutes

Wednesday; October 26, 2016; 3:30pm

Present: Dr. Herb Hess, Dr. Feng Li, Justin Pettingill, David Arnett, Nick Bachus, Matt Phillips, Kyle Petersen, Cooper Atkinson, Ian Tanimoto, Brian Cartwright, Shea Morrison, Andrew Jones

Absent: None

Late: None

GJ 218 Conference Room

Moderator: Cooper Atkinson

Minutes: Nicholas Bachus

Updates:

- Stator Design Team:
 - Electrical Team
 - Toroid testing is still in progress and Shea did some more research on the test procedure
 - Met with the ME team to discuss heat transfer ideas
 - Mechanical Team
 - Came up with preliminary heat transfer ideas
 - Did rough Solidworks heat transfer simulation for the stator with the caps and without the caps. The caps were more efficient while the single bore will be sufficient
 - Figure out date for shop training
 - Kyle Peterson started a simple TK code for the fatigue calculations
- Controls Team:
 - Andrew did research on the Texas instruments design drive implementation for the controls code. Does not think it will be applicable for the FRRM.
 - BiSS protocol, found an encoder from the 2012 design team, but can't find the model online.

Update from mentors (Justin and David):

- Justin
 - Found information for permeability for composite materials.
 - Ordered a book "Axiomatic design and fabrication of composite structures"
 - Book goes over how to model a composite rotor

- Found information explaining how the higher resistance the rotor has from the composite material, the lower the eddy current losses there are.
- David
 - Talked to Dr. Berven about getting space in the IRIC. Dr. Hess has possibly already started to work towards getting the flywheel research project a lab.

Update from weekly Tuesday Meeting with Dr. Berven

- The resin epoxy coating is an insulator for the coils and Nick included it within his heat transfer simulation for the caps by adding a small film of plastic (PVC).
- David pitched using a position encoder for the flywheel to Dr. Berven

Other Updates:

- Shea, Nick, and Brian will be working on our respective wiki pages. The rough drafts are due November 4th.

Senior Design Items:

- November 4th the first wiki page draft is due.
- Design Review date will most likely be on November 11 from 2:30-4:30. Email Dr. Berven to see if she will be able to attend.
- Schedule picture for wiki pages